
स्टेनलेस स्टील की बाल्टी — विशिष्टि

(दूसरा पुनरीक्षण)

Stainless Steel Buckets — Specification

(Second Revision)

ICS 97.040.99

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FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Utensils, Cutlery Domestic Hardware Sectional Committee had been approved by the Mechanical Engineering Divisional Council.

This standard was first published in 1978 and revised in 1981. In this revision, the following major changes have been incorporated:

- a) Scope of the standard has been modified;
- b) New performance tests like drop impact, stability test, nominal capacity test have been added;
- c) The bottom construction of bucket changed to ensure there is no cleavage inside; and
- d) Existing material grades revised as per latest standards.

The composition of the committee responsible for the formulation of this standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 ‘Rules for rounding off numerical values (*revised*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard***STAINLESS STEEL BUCKETS — SPECIFICATION***(Second Revision)***1 SCOPE**

This standard covers requirements of stainless steel buckets used for pharmaceutical, medical and kitchen usage.

2 REFERENCES

The standard listed below contain provision which, through reference in this text, constitute provision of this standard. At the time of publication, edition was valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate possibility of applying the most recent edition of the standard indicated below:

*IS No**Title*

5522 : 2014	Stainless steel sheets and strips for utensils — Specification (<i>third revision</i>)
5856 : 2017	Welding consumables — Wire electrodes, strip electrodes, wires and rods for arc welding of stainless and heat resisting steels — Classification (<i>second revision</i>)

<i>IS No</i>	<i>Title</i>
6527 : 1995	Stainless steel wire rod — Specifications (<i>first revision</i>)
6603 : 2001	Stainless steel bars and flats — Specification (<i>first revision</i>)
13395 : 2021	Performance of handles and handle assemblies attached to cookware — Specification (<i>first revision</i>)

3 MATERIAL

The thickness of the sheet and diameter of the stainless steel bar for the handle shall be as given in Table 1. In case the rim of the body is wired, the wire shall be made of stainless steel as given in Table 1.

4 DIMENSIONS

4.1 The typical dimension of the bucket is given in Table 2 for guidance (also see Fig. 1). Any other size of bucket can be made as per agreement to between the purchaser and the manufacturer.

4.2 A deviation of maximum 15 percent shall be permitted for negative tolerance on sheet thickness and the reduction in drawing due to forming process.

Table 1 Typical bucket details*(Clause 3)*

Sl No.	Part of the Bucket	Nominal Size of the Bucket (Diameter of the Bucket at the Top), in mm	Minimum Thickness/Diameter, in mm	Material
(1)	(2)	(3)	(4)	(5)
i)	Body	225 and 250	0.710	302, 304 as per IS 5522
ii)		275 and 300	0.800	
iii)		325 and 350	0.900	
iv)	Bottom ring	225 and 250	1.250	302, 304 as per IS 5522
v)		275, 300, 325 and 350	1.600	
vi)	Ears	225, 250, 275, 300, 325 and 350	1.250	302, 304 as per IS 5522
vii)	Handle	225 and 250	6.000	X02Cr18Ni11/X04Cr18Ni10 of IS 6527 or X04Cr19Ni9/X02Cr19Ni10 of IS 6603
viii)		275 and 300	8.000	
ix)		325 and 350	10.000	
x)	Wire, if used	All Sizes	2.000	X02Cr18Ni11/X04Cr18Ni10 of IS 6527

Table 2 Typical Dimensions of Bucket

(Clause 4.1)

All dimensions in millimeters.

SI No.	Nominal Size	Body			Ear ¹⁾		Size of Bottom Ring		Minimum Nominal Capacity in Liters ²⁾
		Top diameter, A	Depth, B	Bottom diameter, C	Height, D	Width, E	Height, F	Height of bottom folding G	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
i)	225	225	200	150	55	35	30	06	5.5
ii)	250	250	225	170	55	35	30	07	8.0
iii)	275	275	250	190	63	40	40	09	11.0
iv)	300	300	275	210	63	40	50	10	14.0
v)	325	325	300	230	63	40	60	11	18.0
vi)	350	350	325	250	63	40	80	12	23.0

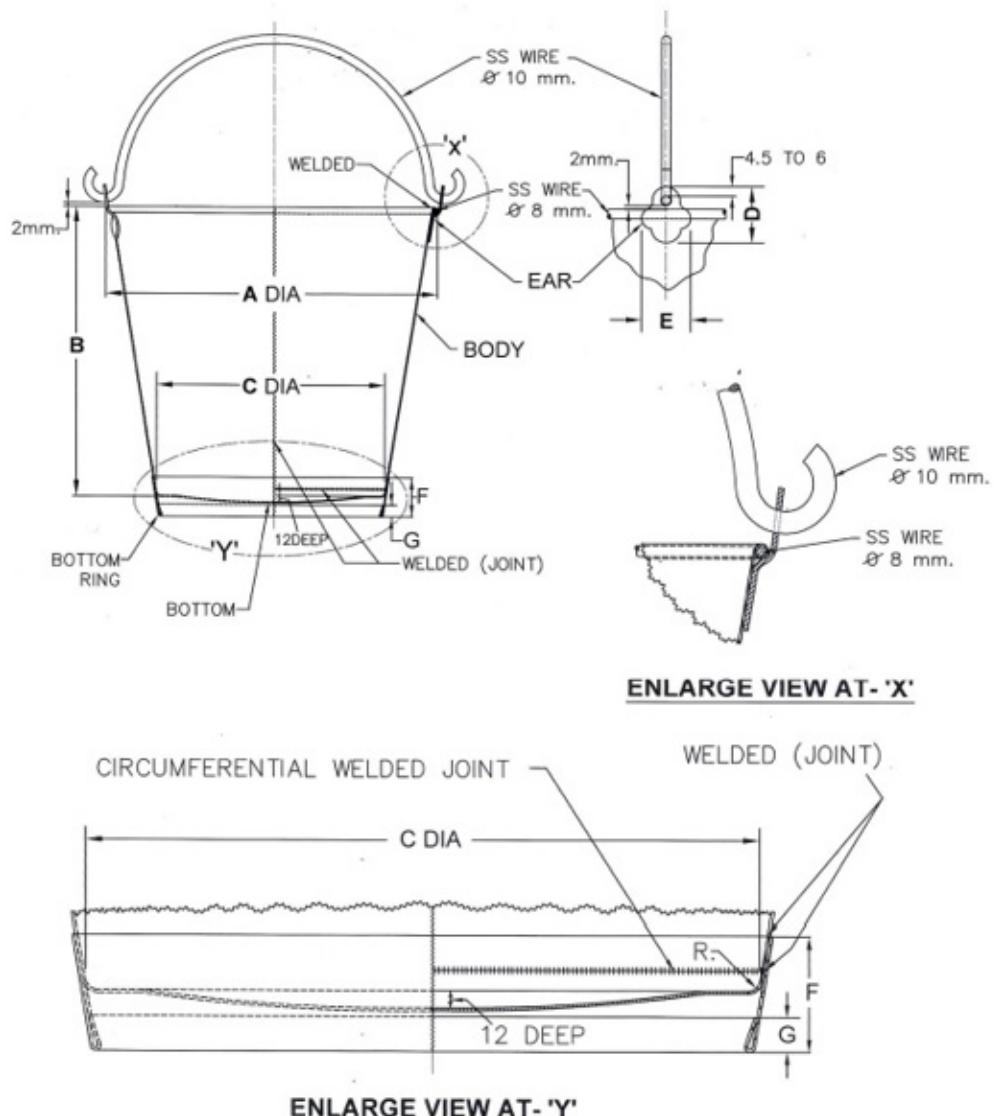
¹⁾ General tolerance allowed on the body is 5 mm and on the ear is 3 mm.²⁾ The capacity shall be calculated when the bucket is full to the brim.

FIG. 1 TYPICAL BUCKET

5 WORKMANSHIP AND FINISH

5.1 Body of the bucket shall be either single piece, drawn or all welded construction. Metal to metal welding, if done, the weld shall be free from welding defects. The welding electrode shall conform to grade 308 L (07Cr18Ni9) or higher grade as per IS 5856. The weld shall be finished properly so that when a finger is passed on the joint, it shall be smooth. The bottom ring can be of weld construction. The bottom ring shall be welded to the outside of the bucket body (*see Fig. 2*). The rim of the body shall be uniformly beaded preferably. The rim shall also be wired before beading. The ears shall be diametrically opposite to each other. All welds shall be sound without visible blowholes, the weld should be flush finished except for the bottom ring. The handle curvature shall be, such as to correspond with the rim of the bucket. There shall be no cleavage inside the bucket.

5.2 Finish

The bucket shall have no sharp or open edges and shall be given a mirror finish. When specifically required by the purchaser, they shall be given a satin finish on the inside/outside of the bucket. The bucket shall be free from distortion, dents, wrinkles, wavy surface, burrs, scratches, pitting, coloring, pitting, blowholes, deep tool marks and other surface defects, normally associated with stainless steel, which affects the sterilization requirement for pharmaceutical, medical and kitchen usage.

The stainless steel bucket shall be subjected to all the tests and meet the minimum requirements as specified in 7.

6 SAMPLING

For the purpose of conducting the test(s), three samples of each individual size shall be tested. In the event of one of the 3 products failing the test, an additional 7 samples shall be tested and these shall all pass.

NOTE — Visual check is normally 100 percent, as agreed to between the purchaser and the manufacturer. Depends on the process controls in manufacturing.

7 PERFORMANCE TEST

7.1 Leakage Test

7.1.1 The bucket shall be filled with water to the brim and kept for 15 min. The bucket shall not show any sign of leakage during this period.

7.1.2 A water tank of suitable size full of water shall be used for conducting the test. The dry empty bucket with its top facing upwards shall be pressed down the water vertically taking care that the top is at least 6 mm above the water level. It shall be observed, whether any water gets into the bucket from the bottom or sides of the bucket. If any water enters the bucket, it shall be considered to have failed in the test. The bucket shall be withdrawn reversed (with top downwards) and again pressed down the water vertically without agitating the

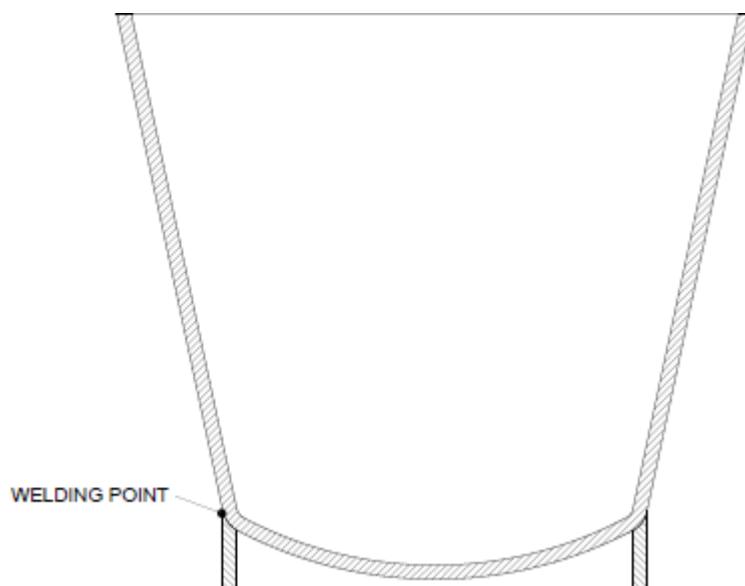


FIG. 2 WELDING OF BOTTOM TO THE BUCKET BOTTOM

water. Should any air bubble be seen escaping through the water, the bucket shall be deemed to leak and therefore, shall be considered to have failed in the test.

7.2 Two samples per lot picked at random, shall pass the fatigue test as prescribed in IS 13395. Also, after the test the bottom ring should show no signs of visible defects. This is a type test.

7.3 Drop Impact Test

Fill water in the bucket to its full capacity at the normal temperature and drop it on a hard wood board of 30 mm or more in thickness fixed horizontally from the height of 400 mm in a vertical state and checked for any change in the appearance

7.4 Stability Test

7.4.1 When the bucket filled with water to the full capacity is placed upright on a flat surface, the bucket shall be stable, shall not rock when an external finger pressure is applied on the top, side surface.

7.4.2 When the bucket filled with water to the full capacity is placed upright over a rough 10° inclined plane, it shall not overturn or fall.

7.5 Staining Test

The surface of the bucket shall be thoroughly washed with hot soapy water. Thoroughly rinse and then degrease the test specimens in acetone or methylated spirits, then wiped using a soft cloth. The bucket, when dipped for 16 h in each of the following solutions maintained at 60 ± 2 °C temperature, shall not show any sign of staining after removal from the solutions at the end of above period:

- a) Ten gram of glacial acetic acid (99 percent) dissolved in distilled water to make 100 ml; and
- b) Five gram of pure sodium chloride dissolved in distilled water to make 100 ml.

7.6 Capacity Test

The bucket shall be filled with water up to the brim. The volume of the water shall be measured with the help of a measuring jar. This shall give the nominal water capacity of the bucket. No negative tolerance shall be allowed.

8 MARKING

8.1 Each bucket shall be suitably marked at the bottom with the manufacturer's name, registered trade-mark or identification mark, batch number, body material grade and the nominal capacity (as specified in the Table).

NOTE — These details could be provided by means of stamping or engraving

8.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the product(s) may be marked with the Standard Mark.

9 PACKING

The bucket shall be wrapped in soft tissue paper and packed in accordance with the instructions of the purchaser. Care shall be taken to see that the buckets do not get scratched, deformed or dented during transit. Packaging should be ecofriendly.

ANNEX A

(Foreword) \

COMMITTEE COMPOSITION

Utensils, Cutlery Domestic Hardware Sectional Committee, MED 33

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In Personal Capacity (<i>4-504, K.G Chandra Vista, OMR, Opposite to Satyabhama University, Sholinganallur), Chennai</i>	SHRI G. SHANMUGANATHAN (Chairman)
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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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